

1. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

Less than 10 units from the number -3 .

- A. $(-13, 7)$
 - B. $[-13, 7]$
 - C. $(-\infty, -13) \cup (7, \infty)$
 - D. $(-\infty, -13] \cup [7, \infty)$
 - E. None of the above
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2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-10x + 3 > -5x - 6$$

- A. $(-\infty, a)$, where $a \in [0.8, 6.8]$
 - B. (a, ∞) , where $a \in [-2.8, -0.8]$
 - C. $(-\infty, a)$, where $a \in [-2.8, 0.2]$
 - D. (a, ∞) , where $a \in [1.8, 3.8]$
 - E. None of the above.
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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$8 + 5x \leq \frac{77x - 4}{9} < 7 + 8x$$

- A. $[a, b)$, where $a \in [-3, 1.5]$ and $b \in [-17.25, -6.75]$
- B. $(-\infty, a) \cup [b, \infty)$, where $a \in [-3.75, 0]$ and $b \in [-15.75, -12.75]$
- C. $(-\infty, a] \cup (b, \infty)$, where $a \in [-5.25, -0.75]$ and $b \in [-15.75, -8.25]$
- D. $(a, b]$, where $a \in [-4.5, 0.75]$ and $b \in [-16.5, -11.25]$

E. None of the above.

4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-9 + 3x > 4x \text{ or } 8 + 4x < 7x$$

- A. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3, -0.75]$ and $b \in [3.75, 14.25]$
- B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7.5, 1.5]$ and $b \in [8.25, 12]$
- C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-9.75, -8.25]$ and $b \in [-0.75, 6]$
- D. $(-\infty, a) \cup (b, \infty)$, where $a \in [-11.25, -5.25]$ and $b \in [0, 5.25]$
- E. $(-\infty, \infty)$

5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-5}{5} + \frac{3}{4}x < \frac{6}{6}x + \frac{10}{9}$$

- A. (a, ∞) , where $a \in [-10.5, -4.5]$
- B. $(-\infty, a)$, where $a \in [-10.5, -4.5]$
- C. $(-\infty, a)$, where $a \in [5.25, 12]$
- D. (a, ∞) , where $a \in [6, 11.25]$
- E. None of the above.

6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{7}{2} + \frac{6}{6}x > \frac{10}{3}x - \frac{3}{9}$$

- A. (a, ∞) , where $a \in [-0.75, 3.75]$
- B. $(-\infty, a)$, where $a \in [-1.5, 7.5]$

- C. $(-\infty, a)$, where $a \in [-3.75, 0]$
- D. (a, ∞) , where $a \in [-3.75, 1.5]$
- E. None of the above.

7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-9 + 6x > 9x \text{ or } 9 + 9x < 11x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-6.15, -4.35]$ and $b \in [1.65, 3.97]$
- B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.82, -2.92]$ and $b \in [4.35, 6.3]$
- C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4.35, -2.77]$ and $b \in [3.3, 6]$
- D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4.72, -3.3]$ and $b \in [0.97, 3.3]$
- E. $(-\infty, \infty)$

8. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

No less than 10 units from the number 7.

- A. $[-3, 17]$
- B. $(-\infty, -3) \cup (17, \infty)$
- C. $(-\infty, -3] \cup [17, \infty)$
- D. $(-3, 17)$
- E. None of the above

9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-5 - 7x \leq \frac{-37x + 5}{6} < 4 - 8x$$

- A. $(-\infty, a) \cup [b, \infty)$, where $a \in [-8.25, -3.75]$ and $b \in [0.75, 5.25]$
 - B. $[a, b)$, where $a \in [-9, -5.25]$ and $b \in [0.75, 4.5]$
 - C. $(-\infty, a] \cup (b, \infty)$, where $a \in [-10.5, -3.75]$ and $b \in [-0.75, 9.75]$
 - D. $(a, b]$, where $a \in [-9, -2.25]$ and $b \in [-1.5, 2.25]$
 - E. None of the above.
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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7x + 10 \leq -6x + 4$$

- A. $[a, \infty)$, where $a \in [3, 7]$
 - B. $[a, \infty)$, where $a \in [-9, -4]$
 - C. $(-\infty, a]$, where $a \in [-8, -4]$
 - D. $(-\infty, a]$, where $a \in [2, 12]$
 - E. None of the above.
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